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AUTOMATION.

MANPOWER RESEARCH COUNCIL, MILWAUKEE, WIS.

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THE MANPOWER RESEARCH COUNCIL, A NONPROFIT SERVICE ORGANIZATION, HAS AS ITS OBJECTIVE THE DEVELOPMENT OF AN INTERCHANGE AMONG THE MANUFACTURING AND SERVICE INDUSTRIES OF THE UNITED STATES OF INFORMATION ON EMPLOYMENT, INDUSTRIAL RELATIONS TRENDS AND ACTIVITIES, AND MANAGEMENT PROBLEMS. A SURVEY OF 200 MEMBER CORPORATIONS, EMPLOYING A TOTAL OF 824,772 PEOPLE SHOWED THE EFFECTS OF AUTOMATION ON EMPLOYMENT. FINDINGS WERE--(1) 43 PERCENT BELIEVE THAT AUTOMATION WILL INCREASE THE TOTAL NUMBER OF JOBS WITHIN THE NEXT 5 YEARS, 28 PERCENT FEEL IT WILL DECREASE THE NUMBER OF JOBS, AND 29 PERCENT FEEL THE NUMBER OF JOBS WILL REMAIN ABOUT THE SAME, (2) 75 PERCENT INDICATED THAT AUTOMATION HAS ADDED NEW JOBS IN THEIR COMPANY IN THE LAST YEAR, AND (3) 28 PERCENT INDICATED THAT THEY ARE PRESENTLY SHORT OF PERSONNEL IN JOB CATEGORIES SPECIFICALLY RELATED TO AUTOMATION. MAJOR AREAS IN WHICH AUTOMATION WAS INTRODUCED OR EXTENDED DURING THE PAST YEAR WERE ACCOUNTING, PAYROLL, RECORD KEEPING, SALES ANALYSIS, AND MATERIAL HANDLING. THE EFFECT OF AUTOMATION ON EMPLOYEES WAS MINIMIZED BY NORMAL ATTRITION AND TRAINING DISPLACED EMPLOYEES FOR NEW JOBS. (PS)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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RESEARCH REPORT NUMBER TWO:

AUTOMATION

THE MANPOWER® RESEARCH COUNCIL

November 1964

A NON-PROFIT RESEARCH ORGANIZATION, SPONSORED AND OPERATED AS A PUBLIC SERVICE BY MANPOWER, INC.

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STATEMENT OF PURPOSE

The Manpower Research Council has as its objective the development of an interchange of information on employment, industrial relations trends and activities, and management problems among the manufacturing and service industries of the United States. The Council is organized without stock and not for profit, but as a public service. It is supported by donated funds, office space and personnel, under the aegis of Manpower Inc.

MANPOWER RESEARCH COUNCIL
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This comprehensive report details the experiences of the over 200 corporations, employing a total of 824,772 people, who are members of the Manpower Research Council.

The subject under discussion dealt with the effects of automation on employment.

A detailed analysis of the findings is contained on the following pages. Here is a brief summary:

- 43 per cent believe that automation will increase the total number of jobs within the next five years. 28 per cent feel it will decrease the number of jobs, while 29 per cent feel the number of jobs will remain about the same.
- 75 per cent indicated that automation has added new jobs in their company in the last year.
- 28 per cent indicated that they are presently short of personnel in job categories specifically related to automation.

During the past year the major areas in which automation was introduced or extended were as follows:

Accounting	21%
Payroll	20%
Record Keeping	17%
Sales Analysis	11%
Material Handling	10%

The effect of automation on employees has been minimized by two techniques:

Normal attrition plus reduced lines	37%
Training displaced employees for new jobs	28%

The major factors limiting the expansion of automation in firms are:

Work does not lend itself to automation	41%
Automatic equipment is too expensive	26%
Organized labor	15%

However, 65 per cent of the respondents feel that other factors (new products, new services, etc.) have caused overall total employment to grow despite any personnel reduction recently from automation.

A limited number of additional copies of the report are available, should you wish to distribute them to others in your organization or to members of associations to which you belong.

A special form has been included on the last page of this booklet for that purpose.

Thank you for your cooperation. Within a short while you will be receiving the third questionnaire for use in gathering data for Research Report Number Three.

Elmer L. Winter
President, Manpower Research Council
Milwaukee, Wisconsin

MANPOWER RESEARCH COUNCIL
SUBJ: AUTOMATION
SUMMARY OF FINDINGS

	TOTAL %	MFG. %	SERVICE %	RETAIL %	BANK %	INS. %
1. In your opinion, will automation—on the whole—throughout the country—increase or decrease the total number of jobs within the next 5 years?						
Increase	43	47	39	53	31	11
Decrease	28	31	25	6	31	33
About the same	29	22	36	41	38	56
2. In your opinion, will automation *in your branch of industry,* increase or decrease the total number of jobs in next 5 years?						
Increase	29	32	15	56	23	11
Decrease	36	35	33	32	38	67
The same	34	33	52	12	39	22
3. In your opinion, will automation in your company's *Production areas* increase or decrease the total number of jobs within the next 5 years?						
Increase	22	23	4	39	25	25
Decrease	38	41	32	23	38	38
The same	40	36	64	38	37	37

VERBATIM COMMENTS

- *Actual employment level has increased, because of a production level that has increased faster than the decreased need for workers because of automation.*

4. In your opinion, will automation in your company's *office areas* increase or decrease the total number of jobs within the next 5 years?						
Increase	21	21	22	31	8	11
Decrease	38	39	26	38	42	67
The same	41	40	52	31	50	22

5. Did your company *this year* introduce or extend automation into the following kinds of operation.	TOTAL %	MFG. %	SERVICE %	RETAIL %	BANK %	INS. %
Machining	6	8	1	2	—	—
Material Handling	10	12	1	17	—	—
Packaging	5	7	—	10	—	—
Accounting	21	19	25	14	36	28
Payroll	20	19	21	27	28	28
Record-keeping	17	16	18	15	32	23
Research	4	4	9	—	—	1
Engineering	6	5	15	—	—	—
Sales analysis	11	10	10	15	4	19
6. How does your company try to minimize the effects of automation?						
Normal attrition plus reduced hires	37	36	35	37	42	44
Severance Pay	7	9	9	3	3	—
Training displaced employees for new jobs	28	27	28	26	38	33
Counseling service to expedite re-training outside the plant	2	3	—	—	—	—
Pay part of the cost of re-training for new jobs	2	3	—	3	—	6
Pay all of the cost of re-training for new jobs	6	3	12	11	7	6
Special program to obtain new jobs in other companies for displaced employees	5	6	7	3	—	—
Provide long periods of advance warning of planned automation	10	9	9	14	7	11
Other methods	3	4	—	3	3	—

VERBATIM COMMENTS

- *Increases our production without displacement of workers.*
- *Employ temporary employees*
- *Early retirements*
- *Through increasing business*
- *Increased growth takes up the slack*
- *No effect as of yet.*
- *Within plant training for inter-departmental areas.*
- *Have experienced no displacement of personnel.*
- *Employ temporary help during planning and installation whenever possible.*
- *On handy jobs, have a rate support provision to cushion impact of down-grading due to automation.*

7. Has automation added any new jobs in your company during the past year?	TOTAL %	MFG. %	SERVICE %	RETAIL %	BANK %	INS. %
Yes	75	74	81	63	92	63
No	25	26	19	37	8	37
If yes, list below by name:						
Key punch operator	22	23	18	24	20	20
EDP programmer	27	27	23	21	36	30
Machine maintenance	8	9	7	10	3	10
Systems Analyst	19	19	16	24	19	25
Electronic technician	9	10	12	11	3	5
EDP manager	11	8	8	10	13	10
Other	4	4	6	—	6	—

VERBATIM COMMENTS

- *Tab operator*
- *Operations research analysts*
- *We have expanded Ind. Engineering and cost analysis depts.*
- *Scientific Programmers*
- *Inventory Control Clerks*
- *Encoder*
- *Console Operator*
- *Computor Supervisor*
- *Market Analyst*
- *Sales of computer accounting systems*
- *Servicing EDP customers using our service*
- *Certain clerical for input preparation, magnetic ink, rather than punch card.*

8. Are you presently short of personnel in any of the above occupations:						
Yes	28	26	21	41	36	37
No	72	74	79	59	64	63
If yes, can you estimate roughly about how many people in each group:						
(Shown below as per cent responding to each classification)						
Key punch operator	15	12	33	30	—	17
EDP programmer	34	33	17	10	57	67
Machine maintenance	6	9	—	—	—	—
Systems analyst	25	29	—	40	14	16
Electronic technician	10	10	33	10	—	—
EDP manager	3	2	–	10	—	—
Other	7	5	17	—	29	—

VERBATIM COMMENTS

- *Operations research analysts.*
- *Control Clerk*

9. Is your company now contemplating the following types of automation within the next 5 years:	TOTAL %	MFG. %	SERVICE %	RETAIL %	BANK %	INS. %
Numerical control machining	5	6	3	3	7	6
Automatic packaging	5	6	—	6	—	—
Self-correcting processing equipment	2	2	2	7	—	7
Computer-controlled operations in:						
Material processing	9	10	12	8	—	—
Quality control	7	8	5	8	—	—
Information retrieval	12	10	18	10	33	25
Sales forcasting	13	13	8	15	13	19
Material movement	8	9	8	5	8	—
Inventory control	20	20	21	20	13	6
Billing	14	12	16	15	13	25
Other	5	4	7	3	14	12

VERBATIM COMMENTS

- *Payroll*
- *Cost center data accumulation*
- *Manufacturing Processes*
- *Production Control*
- *Accounts Payable*
- *Accounts Receivable*
- *Process Control*
- *Payroll and Personnel*
- *Personnel Records*
- *Addressing & Mailing*
- *Insurance Company writing*
- *Automatic Sub and Hydro Generation*
- *Order entry*
- *Personnel Inventory*
- *Accounting — Billing Services for other firms*

10. What factors are most difficult to overcome in the extension of automation in your company?						
Work does not lend itself to automation	41	40	38	38	34	80
No equipment available to automate	9	11	4	12	—	—
Automatic equipment we could use is too expensive	26	25	30	31	33	20
Government regulations	3	2	8	—	—	—
Organized labor	15	15	15	19	—	—
Automation tried, but created more problems than it solved	2	2	4	—	—	—
Quality suffers by comparison with hand methods	4	5	4	—	33	—

VERBATIM COMMENTS

- *Determining areas where savings will accrue*
- *Untrained personnel*
- *Automation is oversold, too expensive unless the bulk of the work is of an "Automatic Nature"*
- *Training personnel for new jobs*
- *A matter of time and manpower to extend use of available equipment and improve efficiency*
- *Change itself*
- *Convincing the Supervisor that automation can do a better job.*

11. In the past 5 years, have any new products, services, company activities, or other growth factors caused your total employment to grow, despite automation?	TOTAL %	MFG. %	SERVICE %	RETAIL %	BANK %	INS. %
Yes	65	70	43	60	69	62
Our employment has increased because of the following factors:						
New products	29	33	14	35	—	29
New Services	22	16	40	15	53	22
Office and administrative functions	16	14	13	15	35	16
More research and engineering	19	22	20	20	—	19
Larger factory-office staff requirements	14	15	13	15	12	14
No	35	30	57	40	31	38
Our employment has declined in that period	35	31	42	33	50	55
Our employment has remained about the same	65	69	58	67	50	35

VERBATIM COMMENTS

- *Overall growth of the institution*
- *Steady customer growth*
- *Greater volume of business*
- *Increased sales through better penetration of existing markets, plus new area development.*

12. In the past 5 years, has your company discontinued more office jobs that production jobs?						
More production jobs	63	68	67	40	50	20
More office jobs	37	32	33	60	50	80
13. In what category of business would your firm be classified?		58	17	11	8	6